Numerical methods for ordinary differential equations

Prowadzący: prof. dr hab. Michael Froehner.

Program wykładu:
1. Introduction to Initial Value Problem (I.V.P.)
2. Euler's Method for ODE's; Error Analysis.
3. Module for Taylor's Method for ODE's.
4. Module for the Runge-Kutta Method (Single-Step Methods).
5. Runge-Kutta-Fehlberg Method for ODE's.
6. Adams-Bashforth-Moulton Method (Multi-Step Methods).
7. Milne-Simpson Method (Multi-Step Methods).
8. Generalization of Discretization Methods (Step-by-Step Methods).
9. Stability, Stiff Equations and other Problems
10. Boundary Value Problems (The Shooting Method).
11. Examples.

Literatura:
Mathews, J., Fink, K., „Numerical Methods Using Matlab", Prentice Hall, 2004
Stoer, J., Bulirsch, R., „Numerische Mathematik 2.", Springer-Lehrbuch, 2005
Stoer, J., Bulirsch, R., „Wstęp do metod numerycznych", Warszawa, 1980